

SEQUENCE LISTING

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 Kumar, Mukesh

<120> Genetic Adjuvants for Immunotherapy

<130> USF-182XC1

<140> 10/655,873
 <141> 2003-09-05

<150> 60/319,523
 <151> 2002-09-05

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<170> PatentIn version 3.3

<210> 1
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<220>
 <223> forward primer for murine IL-12 p40 subunit

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 <223> reverse primer for murine IL-12 p40 subunit

<400> 2
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<220>
 <223> reverse primer for murine IL-12 p35 subunit

<400> 6
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 <213> Homo sapiens

<400> 7
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 cgagaagctg atgtagagag agacacagaa ggagacagaa agcaagagac cagagtcccg 180
 ggaaagtccg gccgcgcctc gggacaatta taaaaatgtg gccccctggg tcagcctccc 240
 agccaccgcc ctacacctgc gggccacag gtctgcaccc agcggctcgc cctgtgtccc 300
 tgcagtgcgg gctcagcatg tgtccagcgc gcagcctcct ccttgtgget accctgggtcc 360

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ccagacaaaac tctagaattht tacccttgca cttctgaaga gattgatcat gaagatatca    540
caaaagataa aaccagcaca gtggaggcct gtttaccatt ggaattaacc aagaatgaga    600
gttgctaaa ttccagagag acctctttca taactaatgg gagttgctg gctccagaa    660
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gaaatgagga aactttgata ggatgtggat taagaactag ggagggggaa agaaggatgg   1080
gaactattaca tccacatgat acctctgatc aagtattttt gacatttact gtggataaat   1140
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tggaacaaaa catgtaagca taacttattt taaaatattt atttatataa cttggtaatc   1320
atgaaagcat ctgagctaac ttatattht ttatgttata tttattaaat tatttatcaa   1380
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<210> 8
<211> 253
<212> PRT
<213> Homo sapiens

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<400> 8
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Met Trp Pro Pro Gly Ser Ala Ser Gln Pro Pro Pro Ser Pro Ala Ala
1          5          10          15

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Ala Thr Gly Leu His Pro Ala Ala Arg Pro Val Ser Leu Gln Cys Arg
20          25          30

```

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Leu Ser Met Cys Pro Ala Arg Ser Leu Leu Leu Val Ala Thr Leu Val

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35		40		45
Leu Leu Asp His Leu Ser Leu Ala Arg Asn Leu Pro Val Ala Thr Pro				
50		55		60
Asp Pro Gly Met Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg				
65		70		80
Ala Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr				
	85		90	95
Pro Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys				
	100		105	110
Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu				
	115		120	125
Ser Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys				
	130		135	140
Leu Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser				
145		150		155
Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn				
	165		170	175
Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn				
	180		185	190
Met Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser				
	195		200	205
Glu Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys				
	210		215	220
Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala				
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<210> 9
<211> 2347
<212> DNA
<213> Homo sapiens

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aagaaagatg tttatgtcgt agaattggat tggatccgg atgcccctgg agaaatggtg    180
gtctcacct gtgacacccc tgaagaagat ggtatcacct ggaccttga ccagagcagt    240
gaggtcttag gctctggcaa aacctgacc atccaagtca aagagtttgg agatgctggc    300
cagtacacct gtcacaaagg aggcgaggtt ctaagccatt cgtcctgct gcttcacaaa    360
aaggaagatg gaatttggtc cactgatatt ttaaaggacc agaaagaacc caaaaataag    420
acctttctaa gatgcgaggc caagaattat totggacgtt tcacctgctg gtggctgacg    480
acaatcagta ctgatttgac attcagtgtc aaaagcagca gaggctcttc tgacccccaa    540
ggggtgacgt gcgagctgc tacactctct gcagagagag tcagagggga caacaaggag    600
tatgagtact cagtggagtg ccaggaggac agtgccctgcc cagctgctga ggagagtctg    660
ccattgagg tcatggtgga tgccgttcac aagctcaagt atgaaaacta caccagcagc    720
ttcttcatca gggacatcat caaacctgac ccaccaaga acttgacgt gaagccatta    780
aagaattctc ggcaggtgga ggtcagctgg gagtacctg acacctggag tactccacat    840
tctactttct cctgacatt ctgcgttcag gtccaggcca agagcaagag agaaaagaaa    900
gatagagtct tcacggacaa gacctcagcc acggtcatct gcgcacaaa tgccagcatt    960
agcgtgcggg ccaggaccg ctactatagc tcctcttga gcaatgggc atctgtgcc    1020
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atgttttaaag acacaacgga atagacccaa aaagataatt tctatctgat ttgctttaaa    1140
acgttttttt aggatcacia tgatatcttt gctgtatttg tatagttaga tgctaaatgc    1200
tcattgaaac aatcagctaa tttatgtata gattttccag ctctcaagtt gccatgggcc    1260
tctatgctat ttaaataatt aagtaattta tgtatttatt agtatattac tgttatttaa    1320
cgtttgtctg ccaggatgta tggaatgttt cactcttta tgacctgat catcaggatc    1380
agtccclatt atgcaaaatg tgaatttaat tttatttgta ctgacaactt ttcaagcaag    1440
gctgcaagta catcagtttt atgacaatca ggaagaatgc agtgttctga taccagtgcc    1500

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atcatacact tgtgatggat gggaaacgcaa gagatactta catggaaacc tgacaatgca 1560
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ggagatgggtg ttgataaagc aatttagggc cacttacact tctaagcaag tttaatcttt 1680
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aaaaaaaaa tgattgaat taaaattcag ctttagcttc catggcagtc ctcaccccca 1980
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tgaagggtgt acttttaagt aatgtatgtg cgtctgttaa agtgattaca ttgttttct 2280
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<210> 10
<211> 328
<212> PRT
<213> Homo sapiens

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<400> 10
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```

```

Ala Ser Pro Leu Val Ala Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
20             25             30

```

```

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
35             40             45

```

```

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
50             55             60

```

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
 65 70 75 80

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
 85 90 95

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
 100 105 110

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
 115 120 125

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
 130 135 140

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
 145 150 155 160

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
 165 170 175

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
 180 185 190

Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile
 195 200 205

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
 210 215 220

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
 225 230 235 240

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
 245 250 255

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
 260 265 270

Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
 275 280 285

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
 290 295 300

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
 305 310 315 320

Glu Trp Ala Ser Val Pro Cys Ser
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<210> 11

<211> 1240

<212> DNA

<213> Homo sapiens

<400> 11

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gaaacgatga aatatacaag ttatatcttg gcttttcagc tctgcacgtt tttgggttct    180
cttggtgtgt actgccagga cccatatgta aaagaagcag aaaaccttaa gaaatatatt    240
aatgcaggtc attcagatgt agcggataat ggaactcttt tcttaggcac ttgaagaat     300
tggaagagg agagtgcag aaaaaaatg cagagccaaa ttgtctcctt ttacttcaaa     360
ctttttaaaa actttaaaga tgaccagagc atccaaaaga gtgtggagac catcaaggaa     420
gacatgaatg tcaagttttt caatagcaac aaaaagaaac gagatgactt cgaaaagctg     480
actaattatt cggtaactga cttgaatgtc caacgcaaag caatacatga acatcatcaa     540
gtgatggctg aactgtcgcc agcagctaaa acagggagc gaaaaaggag tcagatgctg     600
tttcgaggtc gaagagcatc ccagtaatgg ttgtcctgcc tgcaatatatt gaattttaaa     660
tctaaatcta tttattaata tttaacatta tttatatggg gaatatatatt ttagactcat     720
caatcaaata agtatttata atagcaactt ttgtgtaatg aaaatgaata tctattaata     780
tatgtattat ttataattcc tatatcctgt gactgtctca cttaatcctt tgttttctga     840
ctaattaggc aaggctatgt gattacaagg ctttatctca ggggccaaact aggcagccaa     900
cctaagcaag atcccatggg ttgtgtgttt atttcaactg atgatacaat gaacaattat     960
aagtgaagtg atactatcca gttactgccg gtttgaaaat atgactgcaa tctgagccag    1020
tgctttaatg gcatgtcaga cagaacttga atgtgtcagg tgacctgat gaaaacatag    1080

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catctcagga gatttcatgc ctggtgcttc caaatattgt tgacaactgt gactgtaccc 1140
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agttcacac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1240

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<210> 12
<211> 166
<212> PRT
<213> Homo sapiens

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<400> 12

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Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu
1           5           10           15

```

```

Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu
          20           25           30

```

```

Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn
          35           40           45

```

```

Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp
          50           55           60

```

```

Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe
65           70           75           80

```

```

Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile
          85           90           95

```

```

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg
          100          105          110

```

```

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val
          115          120          125

```

```

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser
          130          135          140

```

```

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg
145           150           155           160

```

```

Gly Arg Arg Ala Ser Gln

```

